

A BODY-AWARENESS PRIMER FOR RIDERS

BALANCE IN MOTION: *One of riding's greatest challenges*

Got position problems? Try improving your balance

BY BETH GLOSTEN, MD

PHOTOGRAPHS AND ILLUSTRATIONS COURTESY OF BETH GLOSTEN, MD

Kee your shoulders back and your eyes up," your instructor orders. You comply, but seconds later you find your gaze fixed on your horse's neck and your shoulders hunched up around your ears.

"Relax your arms and shoulders, and keep a steady contact." You try to release your arms, but instead your entire body goes limp—that is, until everything tenses again.

"Sit into your right seat bone." Try as you might, you cannot keep that seat bone down.

And for the umpteenth time: "Keep your knees and heels stretched down and your legs long." You do so, but moments later your knees are jammed up against the thigh blocks.

Most dressage riders know that improving their position will increase their effectiveness in the saddle, yet changes can be frustratingly elusive despite repeated efforts. That's because many position faults are symptoms of a deeper problem: ineffective balance. To compensate, the body develops other ways of staying in the saddle—and is understandably reluctant to relinquish those habits.

To make real changes that stick, you must start by establishing better balance. Then you can work on developing ways of maintaining a correct and effective position even when your balance is challenged. In this article, I'll explain the most common position flaws and their causes, and I'll give you ways to change them.

Balance Defined

Balance is a state of equilibrium, stability, and steadiness, either at rest or in motion. We easily adapt, without much conscious thought, to walking on uneven ground, carrying groceries with one arm, or putting on a shoe. While riding, however, you are expected to sit “quietly” on a constantly moving surface whose movement is not always predictable. A sudden spook can obviously overwhelm your balance and leave you in the dirt, but losses of balance can occur even during such “normal” activities as changes in gait or direction.

Balance, Posture, and Anatomy

Efficient balance, on or off the horse, starts with good posture, with any deviations resulting in compensatory muscle tension.

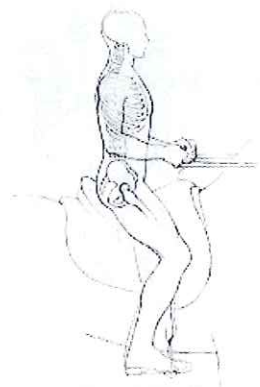


Figure 1. Neutral spine alignment in the saddle, with normal spinal curvature and the seat bones pointing down.

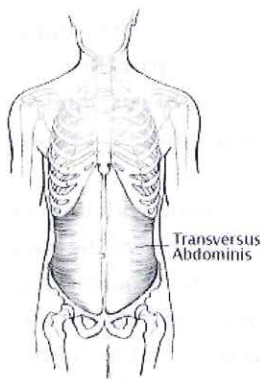


Figure 2. The transversus abdominis is the deepest abdominal muscle and is important for spinal stability. When it contracts, its fibers pull the abdominal wall flat.

When you stand, sit, or ride with proper posture, your spine is in correct, natural alignment. The human spine consists of stacked vertebrae that form curves at the cervical spine (neck), the thoracic spine (ribcage area), and the lumbar spine (low back). These curves provide shock absorption and allow some movement.

When the vertebrae are in proper alignment with these curves, the position is referred to as “neutral spine.” In riding, the optimal position is neutral-spine alignment with the spine on the vertical (Figure 1). This is the anatomic basis for the classic “shoulder-hip-heel” alignment.

It’s one thing to get your spine into the correct position, but it’s another to keep it there on the back of a moving horse. Keeping a stable and steady spine position is the job of the deep postural muscles of the abdomen and the back, as shown in Figures 2 through 4.

All together, these torso muscles act as an elastic corset that wraps around the midsec-

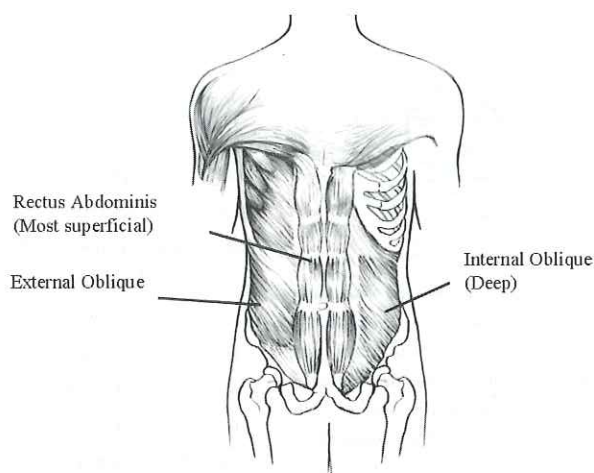


Figure 3. Three layers of abdominal muscles. The obliques have matched pairs on each side of the body. The internal oblique is important for spinal stability and can flex, side-bend, and rotate the spine. The more superficial rectus abdominis (the “six-pack” muscle) is not as important for spinal stability and balance.

tion of the body (or “core”), creating or resisting movement of the spine in any direction. These so-called core muscles are uniquely equipped to support our upright position because they are of the slow-twitch variety—“distance runners” that are designed to work at a low level the entire day. They need to work harder to preserve posture on horseback than when you are sitting at your desk, of course. In the saddle, they must allow enough movement for the rider to stay with the horse but provide enough stability for the torso to be secure. In this way, position and balance are preserved in a dynamic fashion, and the rider’s shoulders and legs don’t have to tense and grip in order to keep her in the saddle.

The spine ends in five fused vertebrae that form the sacrum or the back of the pelvis (Figure 5). Because it is connected to the spine, pelvic position affects spinal alignment. When a rider sits in a neutral-spine position, the ischial tuberosities (seat bones) point downward (Figure 1).

The pelvis can be used as a frame of reference for one’s position in the saddle. A rider sits on the upper

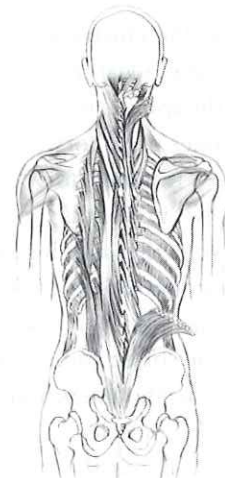


Figure 4. There are many layers of back muscle that pull the spine into extension. The deepest layers (those that span one to three vertebrae) are most important for spinal stability.

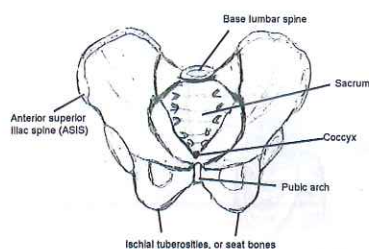


Figure 5. The sacrum (the end of the spine) forms the back of the pelvis. The ischial tuberosities are better known as the seat bones; the anterior superior iliac spine (ASIS) is the bony prominence often called the hip bone. The pelvic floor spans the bottom parts of the pelvis: coccyx (tailbone), ischial tuberosities, and pubic arch.

thighs and on the pelvic floor (the bones, tissues, and muscles at the base of the pelvis). The pelvic floor makes something of a diamond shape: pubic arch in front, a seat bone on each side, and the tailbone in back. Weight distribution over the pelvic floor, unique to each rider, reflects body position.

Help for Imperfect Posture

Now that we've looked at the components of good posture and the roles that the core muscles play in keeping you supple yet stable in the saddle, let's explore the most common rider-position problems and their corresponding anatomical weaknesses. I'll explain the biomechanical causes of these postural flaws, and then I'll give you simple exercises that you can do to improve core strength, alignment, and flexibility. (The usual caveats apply here: Seek a physician's advice before beginning any exercise program.)

Postural Problem: Improper Spinal Alignment

Look at the illustrations in Figure 6 (above right). Neither rider shows ideal spine alignment. Rider A has a flexed posture: The spine is rounded with loss of the lumbar curve; the seat bones point forward rather than down; and the shoulders are rounded forward. The distance between ribcage and pelvis in front is too short.

If your dressage instructor continually reminds you to put your shoulders back, you likely have a rounded posture—the common curse of the desk-bound worker. This imbalance often comes packaged with tight pectoralis muscles in the shoulders and a tendency to overuse the gluteal (buttocks) muscles.

Rider B has the opposite problem: extended posture. The spine is arched with too much lumbar curve, and the seat bones point back rather than down. The distance between ribcage and pelvis in front is too long.

Many people carry stress in their shoulders. Some even try to use their shoulders as a balance aid. Our shoulders are not equipped for this job, and pain and stiffness result. In the

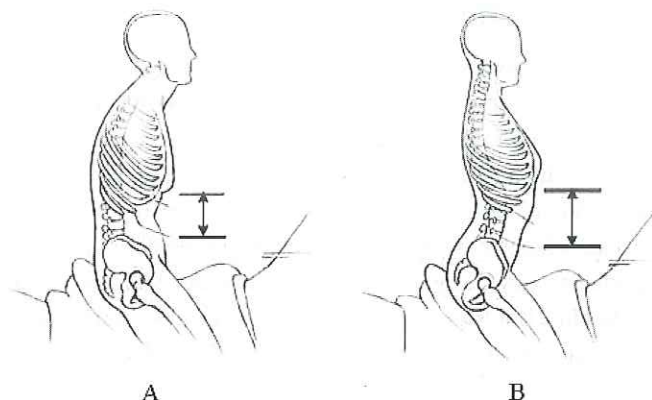


Figure 6. Flexed (A) and extended (B) spinal alignment.

saddle, this upper-body focus leads to arm tension, which is the enemy of elastic contact with the horse's mouth. The rider who tries too hard to "sit up straight with shoulders back" can create not only shoulder tension, but also too much tone in the muscles of the mid- and upper back, causing an arched posture like that of Rider B.

Get the feeling of correct spinal alignment and tap in to your postural muscles with the following exercises.

Exercise 1: Neutral spine

Equipment needed: Exercise mat or carpeted floor

Lie on a mat or the floor with your knees bent and your feet flat on the floor, seat-bone-distance apart. Release the muscles of your back and let the weight of your body sink onto the mat without actively pressing down. Notice where you feel your body contacting the floor.

When your spine is in neutral alignment with its normal curves, your weight should contact the floor at the back of the pelvis, around the shoulders and the shoulder blades, and the back of the head. There should be little or no contact with your lower back (the lumbar curve) or your neck (the cervical curve). Everyone's anatomy is slightly different, but the human back is not completely flat.

After you find your neutral-spine position, try the following exercise, which will help you to activate your deep abdominal muscles (instead of tensing your shoulders) to stabilize the position of your spine and pelvis.

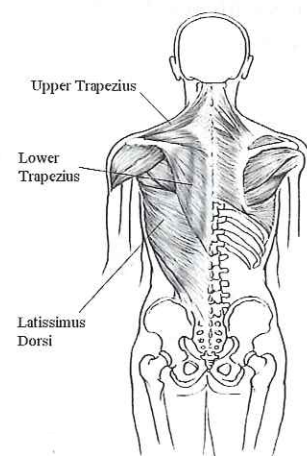


Figure 7. The lower trapezius and latissimus dorsi muscles pull the shoulder girdle back and down. If you have a rounded-shoulder posture, these muscles need to be strengthened.

Exercise 2: Navel-to-spine breathing (Pilates breathing)

Equipment needed: Exercise mat or carpeted floor

Lie on a mat or the floor as in exercise 1. As you inhale, try to expand your lower ribs to take in the air. As you exhale, feel your abdominal wall press inward toward your spine. You should feel all the muscles of your torso wrap around and stabilize your midsection. You're not trying to move anything; the aim of this exercise is to activate the deep postural muscles for spine stability. Inhale again while striving to maintain the tone in your postural muscles. This is not a relaxing "belly breath," so try not to let your tummy poke out while you breathe in.

Lying down, you can feel the bones of your spine stay stable as you breathe. Later, you can practice this exercise while sitting in a chair, driving your car, or even riding.

Exercise 3: Pelvic rocking

Equipment needed: Exercise mat or carpeted floor

Lie on your back with your knees bent and your feet flat on the floor, seat-bone-distance apart, in neutral alignment. Inhale, breathing into the sides of your ribcage. As you exhale, "scoop" your abdominal muscles toward your spine and flatten your lower back against the floor, pressing the top of your pelvis down toward the floor (a pelvic tuck).

Now inhale and rock the top of your pelvis forward and away from the floor, arching your lower back slightly so that

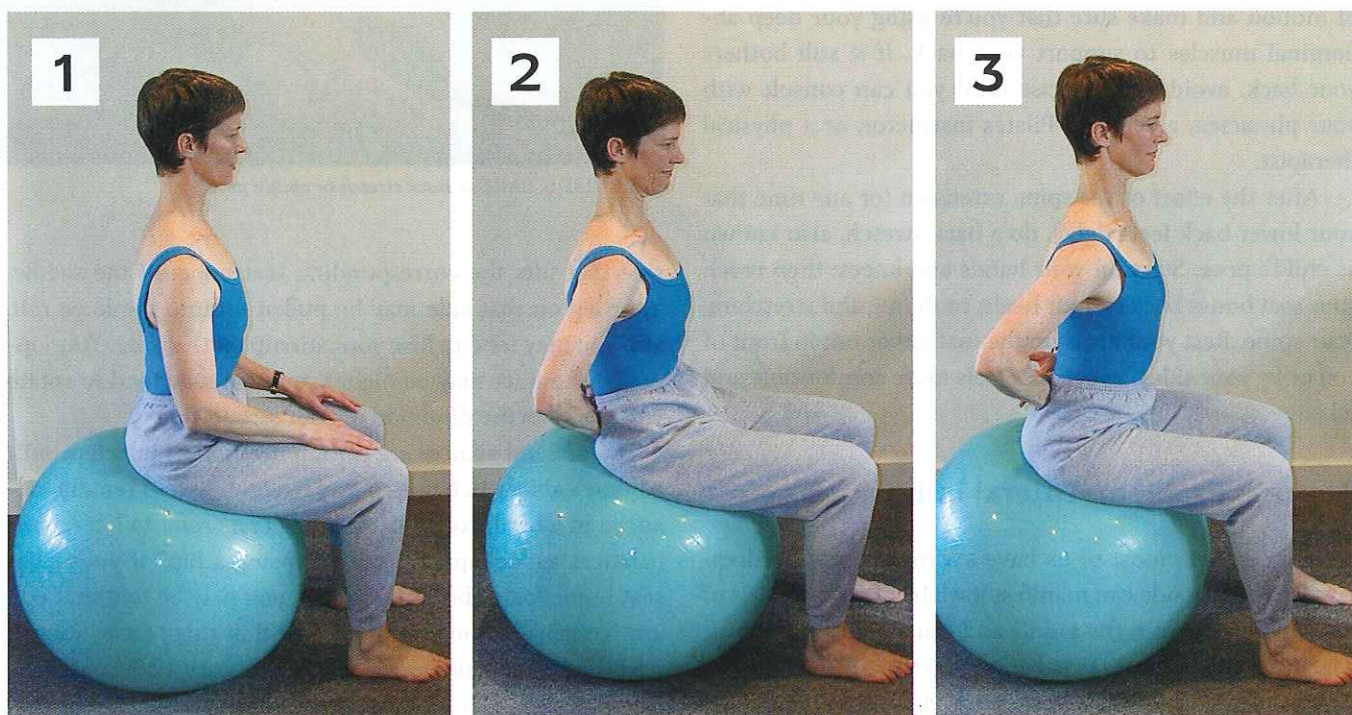
it lifts off the floor. Slowly alternate between flattening and arching your lower back six to eight times. Inhale as you arch and exhale as you flatten. Initiate the movement with just your abdominal and back muscles; try not to use your glutes. Gradually decrease the range of motion until, like a pendulum, your low back comes to rest. This ending point is often a good indication of your proper neutral-spine alignment.

Exercise 4: Pelvic rocking on the ball

Equipment needed: Exercise ball (choose a size that puts your thighs parallel to the ground when you sit on it)

Sit on an exercise ball with your feet flat on the floor and hip-width apart (1). (You don't need to put your hands behind your back; the model did so for the photos so you can see the exercise more clearly). Use a partner or a mirror to ensure that you are in neutral spine alignment with your shoulders over your pelvis and your seat bones pointing straight down.

Inhale; as you exhale, scoop your abs and rock your pelvis into a tuck, pointing your seat bones toward your heels and flattening your lower back without leaning back (2). Now inhale and use your deep back muscles to rock your pelvis in the other direction, arching your back slightly and pointing your seat bones toward the back of the ball (3). Rock back and forth six to eight times before you settle back to neutral spine alignment. Use the muscles of your torso, not your legs or your glutes, to move your pelvis.



PELVIC ROCKING ON THE BALL: Starting position (1), pelvic tuck (2), and seat bones pointing backward (3)

Exercise 5: Abdominal curls

Equipment needed: Exercise mat or carpeted floor

Lie on your back as in exercise 3, arms by your sides. Take a normal breath in; as you exhale, scoop in your lower abs and peel your upper body off the floor, curling up until your shoulder blades are mostly off the mat—no higher—reaching your arms out in front of you. Inhale as you roll back down. Do eight to ten reps.

Maintain the abdominal scoop as you curl up. If your abs bulge out, you are using the more superficial rectus abdominis muscles, and the exercise is less useful. Don't push your lower back into the mat and tuck your pelvis. Keep the back of your neck long to avoid leading with the chin. Curl up and roll down smoothly, and don't forget to breathe!

Exercise 6: Spine extension and back stretch

Equipment needed: Exercise mat or carpeted floor

Lie on your stomach with your legs slightly apart and your forehead resting on a folded towel. Place your arms by your sides, palms up. Take an easy inhale breath. As you exhale, engage your abs (think of pulling your abdomen up off the floor) and roll your shoulders back and down. Inhale again and slowly come into an upper-back extension, using the deep muscles of your upper and middle back to lift your chest while keeping your neck aligned with your spine and your gaze at the front edge of your mat. Exhale and come back to start. Do six to eight reps.

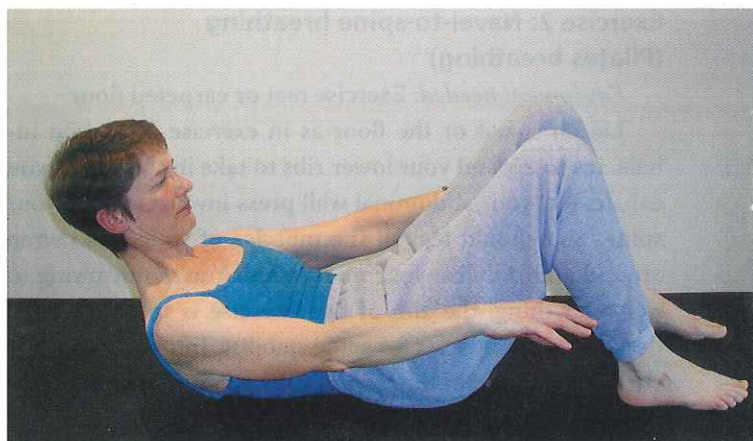
If this exercise hurts your lower back, reduce the range of motion and make sure that you're using your deep abdominal muscles to support your back. If it still bothers your back, avoid this exercise until you can consult with your physician, a certified Pilates instructor, or a physical therapist.

After the effort of the spine extension (or any time that your lower back feels tight), do a back stretch, also known as child's pose. Start on your hands and knees; then reach your seat bones back to your heels, rounding and stretching your spine. Rest your arms on the mat either out in front of you or by your sides, whichever feels more comfortable and relaxing.

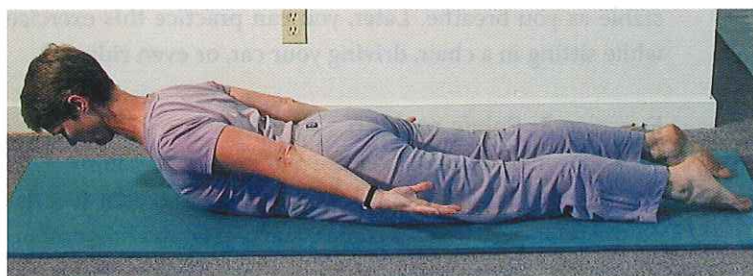
Postural Problem: Lateral Imbalance

Like our horses, most of us have a stronger side. In dressage, the strong side can manifest itself by lifting that side of the pelvis away from the saddle and causing the rider to sit heavily on the opposite (weaker) side (Figure 8).

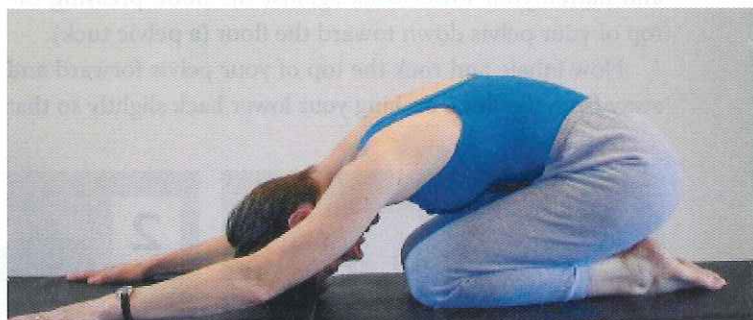
If you are frequently told to "put weight in your right (or left) seat bone," it is likely that you have a strong and short



EXERCISE 5: Abdominal curls



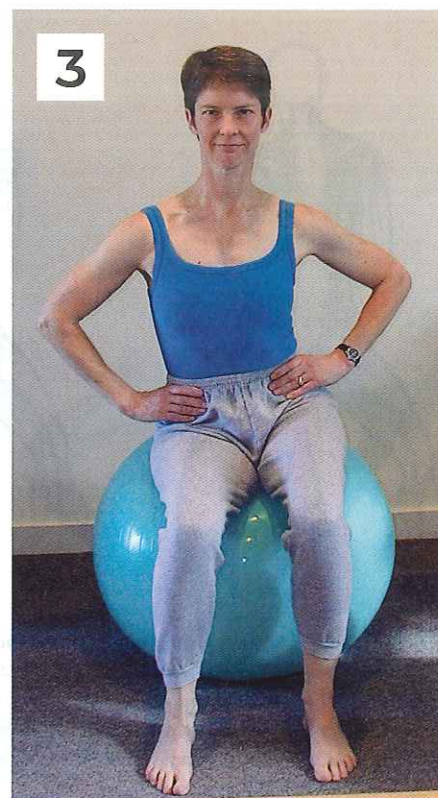
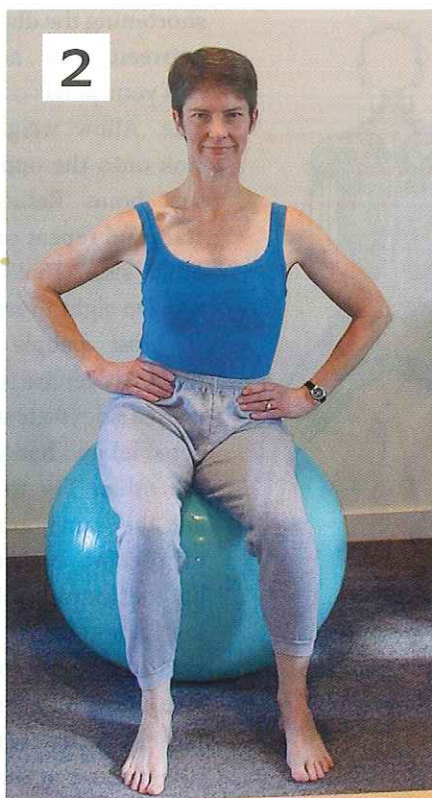
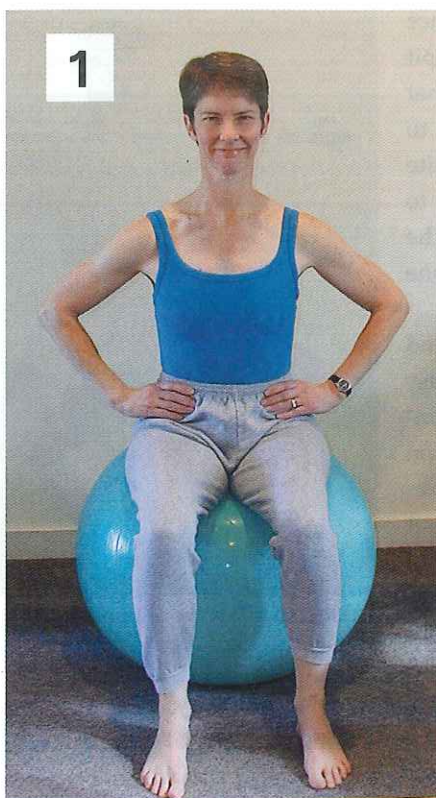
EXERCISE 6: Spine extension



EXERCISE 6, PART 2: Back stretch or child's pose

side that lifts the corresponding seat bone off the saddle. Your leg on that side may be pulled up into the knee roll, and you may tend to lose your stirrup on that side. Your opposite shoulder may be higher, and you may tend to rotate your torso in the direction of your strong side.

Lateral imbalances are common, and they interfere with a horse's ability to bend, to stay straight, and to remain balanced in lateral work. Many riding texts refer to lateral imbalances as "collapsing" or "collapsing a hip." If your right seat bone floats above the saddle, you may be told that you are "collapsing your right hip." I think this is a confusing description, as "collapsing" implies a passive state. In reality, your right-side muscles are working too hard! The real problem is an imbalance in how the postural muscles are



EXERCISE 7: Pelvic side-rocking on the ball: Starting position (1), right (2), and left (3)

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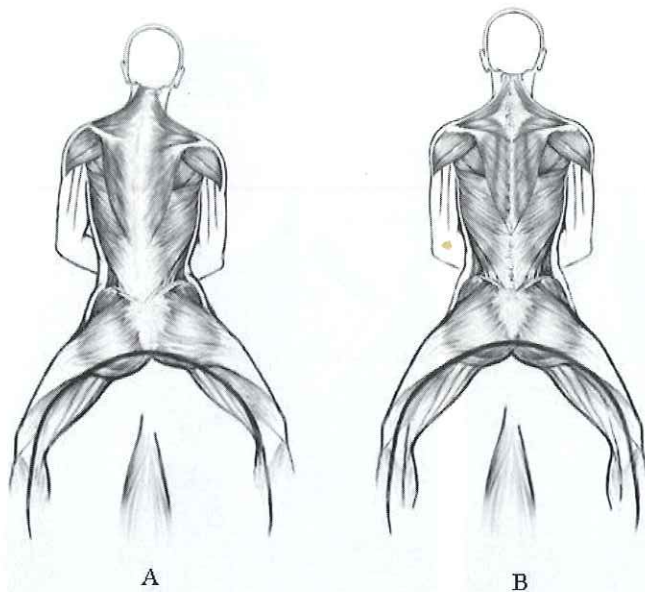


Figure 8. Rider A has a lateral postural imbalance: The muscles on the right side of the body are so short and strong that they're pulling the right side of the pelvis up and shifting the rider's weight to the left. The right shoulder is lower than the left, and the body is slightly rotated to the right. Rider B is sitting correctly: centered in the saddle, with the weight equal over both seat bones.

supporting you: In the above example, the right side of your body is trying to do it all while the left side is "on vacation." To correct such an imbalance, the long, overly stretched muscles of your left side need to engage and lift your weight back to the center of the saddle. They need to get stronger in order to relieve the "overachieving" right side and to put you in better balance.

Exercise 7: Pelvic side-rocking on the ball

Equipment needed: Exercise ball

Sit on an exercise ball in neutral alignment. Place your hands on your waist so you can feel the muscles at your sides engage during the exercise. Lift up one side of your pelvis, engaging the trunk muscles on that side. Think of

shortening the distance between your armpit and your pelvis on that side. Allow weight to sink onto the opposite seat bone. Return to start and repeat on the other side. That's one rep. Do eight to ten.

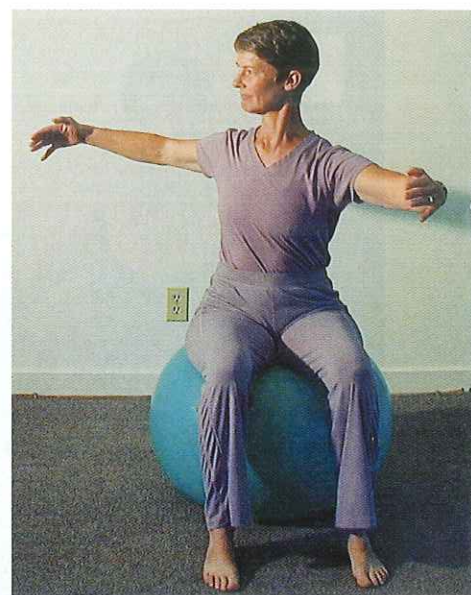
Most people find that this exercise is easy on one side (their stronger side) and harder on the other. Try to create the same amount of rocking movement on the more challenging side. Don't shift your shoulders to the side, lift with your shoulders, twist your body, or use your leg muscles to initiate the movement. Your lateral trunk muscles (the muscles at the sides of your waist) should be doing the work. The movement is small; the challenge is to make it symmetrical.

Exercise 8: Spine twist on the ball

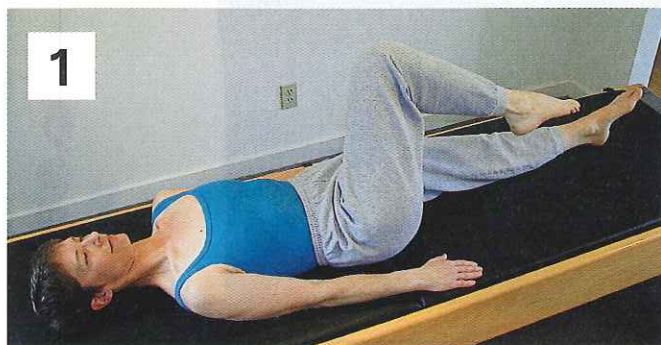
Equipment needed: Exercise ball

Sit on an exercise ball in upright, neutral spinal alignment. Inhale and raise your arms in front of you as if you were holding a large ball. Exhale and rotate your torso to the right, twisting from the waist. Inhale and return to center; exhale and rotate to the left. Repeat four to six times in each direction.

Strive to keep your weight even over both seat bones as you twist. Move your ribcage, arms, and head as a single unit; your arms and head should move with (not more than) your torso.



EXERCISE 8: Spine twist on the ball



EXERCISE 9: Knee circles: Starting position (1) and to the side (2)

Postural Problem: Using the Legs for Balance

If your seat is not stable and balanced in the saddle, you may resort to keeping a death grip with your legs. Gripping pulls the knees up, "pings" you out of the saddle, limits movement of the hip joints, and makes it difficult for the legs to "breathe" with the horse's back and barrel.

For his part, the horse is subjected to constant leg pressure, meaning that your aids must always be louder than the "noise" of your gripping—a cycle that results in your having to give ever-stronger aids in order to get a response.

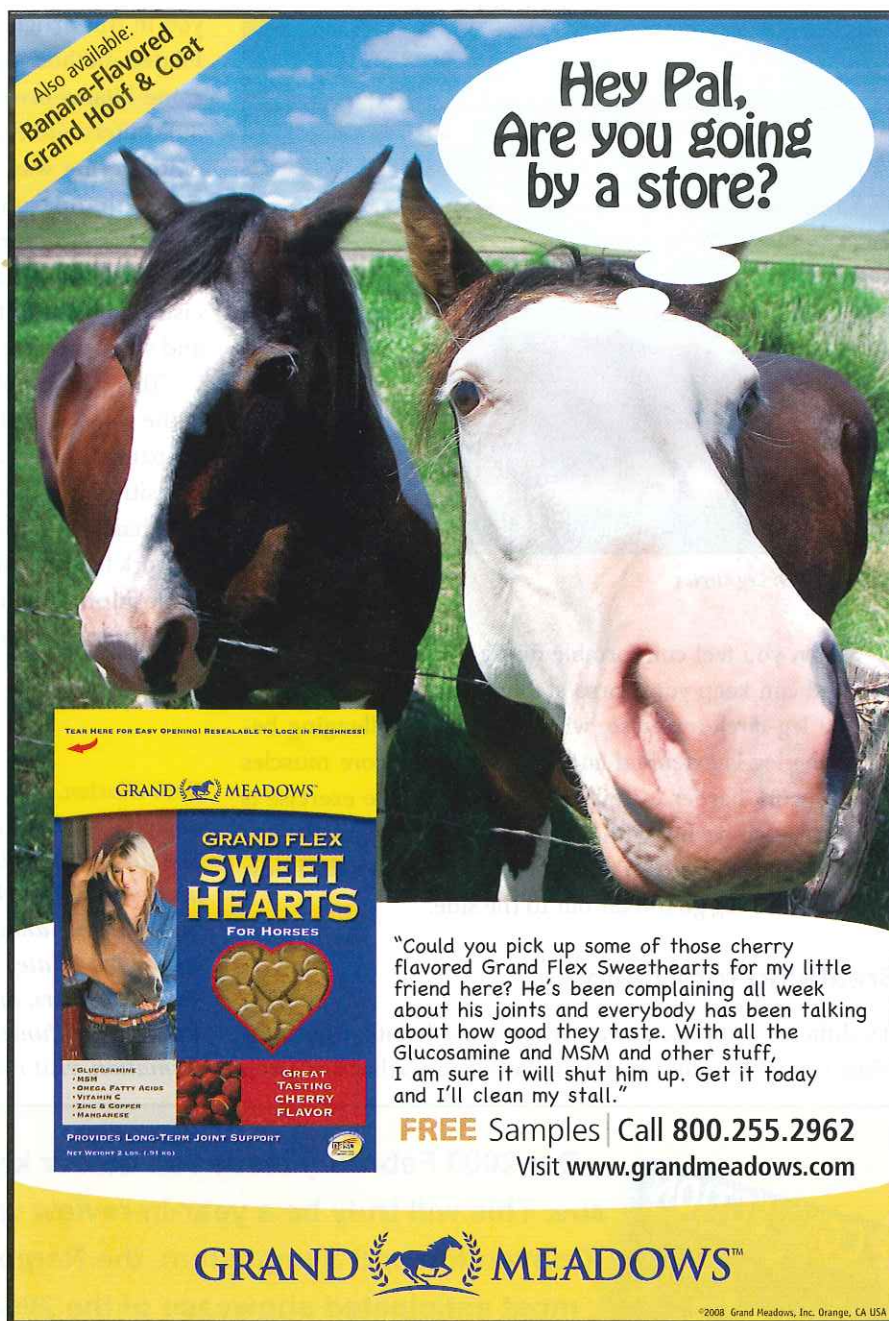
Rider fatigue is a sure sign of too much gripping, as the leg muscles tire after only short bursts of effort. To free your legs from "balance duty," learn to recruit your trunk muscles instead. Except for emergencies, such as a buck or a spook, your legs should be aiding your horse, not helping you to stay on. The following exercise will help you to stabilize your torso apart from your legs, thereby freeing your legs to move with your horse instead of gripping.

Exercise 9: Knee and leg circles

Equipment needed: Exercise mat or carpeted floor

Lie on your back with your legs straight. Exhale and lift your right knee toward your chest. Inhale; exhale and, keeping your torso stable, circle your knee across your body to the left, then down, then out to the side. Inhale as your knee comes back to the start position. Make four to six circles and then repeat in the opposite direction, circling your knee first away from your body and then down and across. Repeat the entire sequence with your left leg.

Use your trunk muscles to keep your pelvis and body from rocking from side to side while your knee moves.



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EXERCISE 9: Leg circles

When you feel comfortable doing the knee-circle exercise and can keep your torso stable during the movement, try the leg-circle exercise, which is more challenging because the leg is extended and therefore your core muscles have to work harder to stabilize your torso. The exercise is the same as above but with a straight leg, describing the circles with your foot. Keep the circles mostly across the body; don't let your leg go too far out to the side.

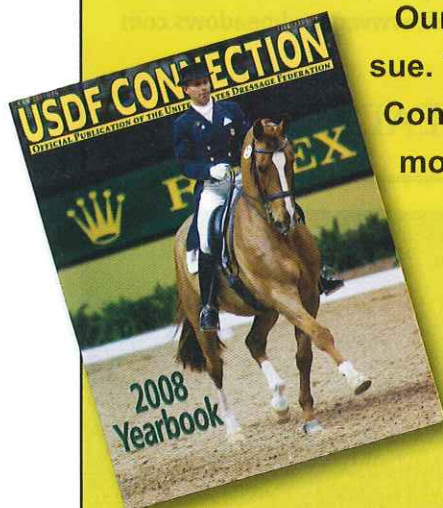
Breathing for Change

It's difficult to break unwanted postural habits, especially while riding. Besides practicing the exercises that I've given

you in this article, recruit the other powerful tool that the Pilates method teaches: the use of breath. The navel-to-spine Pilates-breathing technique (see Exercise 2 on page 39) centers and engages your core muscles in a positive and empowering way. Because it facilitates a correct connection with the trunk muscles, it's an effective aid in helping to break the incorrect practice of trying to use the shoulders for balance and stability. Review the Pilates-breathing exercise before you ride, and practice it while you're in your car and whenever you think of it.

This method of breathing is a half-halt for yourself. Use it the same way that you use a half-halt on your horse: to prepare. Take a navel-to-spine breath before you ask for a transition or a new movement. You'll prepare your body for the change in direction or energy, and your aids will be able to work from a stable torso without disrupting your balance or position. When you feel your old habits creeping back in (and they will), breathe, center, rebalance, and try again. ▲

Beth Glosten, MD, of Redmond, WA, is a USDF bronze, silver, and gold medalist and a USDF "L" graduate with distinction. She discovered Pilates while rehabbing from back surgeries and was hooked when she felt how much it improved her riding. A former anesthesiologist, she began a second career as a certified Pilates instructor. Later, she began working with mounted riders, applying Pilates principles to improve rider balance and function, calling it RiderPilates™. For more information, visit riderpilates.com.



Our 2009 February issue will be our keepsake "Yearbook" issue. This will truly be a year-in-review with coverage from USDF's Convention and Symposium, the Regional Championships, and the most anticipated showcase of the 2008 USDF award winners.

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